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The Test of Self-Conscious Affect: Internal Structure, Differential Scales and Relationships with Long-Term Affects

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Abstract

Item analyses and confirmatory factor analyses on the Test of Self-Conscious Affect (TOSCA), in a student (N = 723) and an adult (N = 891) sample, supported the theorized four factor structure of proneness to reparation, negative self-evaluation, externalizing blame and unconcern. However, two-fifth of the items did not empirically differentiate between two or more factors. Differential TOSCA scales, including only differentiating TOSCA items, were constructed and related to measures of long-term affect, depression, anxiety, and anger. Both the pattern and size of correlations of the original and the differential TOSCA scales were almost identical. Results of this study support the interpretation of TOSCA guilt as a measure of a tendency to reparation associated with guilt and TOSCA shame as a measure of a tendency to global negative self-evaluation.

INTRODUCTION

Over the last decade, Tangney's conceptualization (see e.g. Tangney, 1995, 1998) and measurement instrument, the Test of Self-Conscious Affect (TOSCA; Tangney, Wagner and Gramzow, 1989), of proneness to guilt and shame, have played a major role in guilt and shame research (see e.g. Ferguson and Crowley, 1997; Quiles and Bybee, 1997). The TOSCA contains four scales, measuring proneness to guilt, shame, externalization, and unconcern, which are considered the main reactions people have in typical guilt and shame situations (see e.g. Tangney, 1995). Evidence supporting the validity of Tangney's conceptualization and the TOSCA stems from differential and predicted relationships among the four TOSCA scales, and between the TOSCA guilt and shame scales and various aspects of intrapersonal and interpersonal functioning (such as psychopathology, empathy, and aggression) (for an overview see Tangney, 1995, 1998; Tangney, Burggraf and Wagner, 1995). However, whether the correlations of the items can indeed be

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completely accounted for by the four constructs of proneness to guilt, to shame, to externalization, and to unconcern, and whether all items empirically differentiate between these four constructs, has not yet been investigated. Since such evidence is needed for a valid interpretation of the reported relationships (see e.g. Messick, 1989), this will form the focus of the present study. Moreover, if these four constructs do not suffice or if some items do not differentiate, we shall investigate whether and to what extent revised scales, containing only differentiating items referring to a single construct, can account for the external relationships reported with the TOSCA by relating original and revised TOSCA scales to long-term affects.

Internal structure of the TOSCA

Tangney's theoretical framework

Shame and guilt are the two major concepts in Tangney's theoretical framework, which is strongly inspired by Lewis (1971). She distinguishes shame and guilt as follows: the focus of guilt is on specific behaviour, which implies internal, specific, controllable, and unstable attributions; while for shame the focus is on a negative evaluation of the self, which implies internal, global, uncontrollable, and stable attributions, as proposed by attribution theory (Weiner, 1985). Since one takes responsibility for one's misbehaviour, while keeping a sense of agency, guilt is considered to be less painful than shame and is associated with a tendency to atone, apologize, set things right, or repair its consequences (see also Baumeister, Stillwell and Heatherton, 1994). With associated feelings of worthlessness and smallness, shame is a very painful emotion indeed. Because of the typical shame appraisal, that not much can be done about the situation, shame is associated with a tendency to disappear and to hide (Tangney, 1995). Moreover, Lewis (1971) has noted that shame may be associated with a defensive reaction of passing responsibility from the self to others, often in an irrational way, to make the situation less threatening.

Construction of TOSCA scales

The TOSCA is a scenario-based instrument consisting of 15 situations that were selected from a pool of guilt and shame situations subjects encountered in day-to-day life (see e.g. Tangney, 1990; Tangney *et al.*, 1989). Each situation or scenario is followed by four or five associated responses that capture the possible reactions in such situations. Respondents are asked to imagine themselves in each situation and rate the likelihood of reacting in each of the manners indicated on a five-point scale. Items are summed across situations to yield indices of guilt-proneness (15 items), shame-proneness (15 items), proneness to externalization (ten items), and proneness to unconcern (ten items).[1]

Relationships among TOSCA scales

In a series of studies of adults, Tangney and her collaborators predicted and confirmed the following pattern of relationships among the four TOSCA scales (Tangney, 1990, 1995): a positive relationship between proneness to guilt and proneness to shame (they share important characteristics such as internal attributions and highly similar situational antecedents); a positive relationship between proneness to shame and proneness to externalization (externalizing blame can be a defensive reaction against the painfulness of

[1]The TOSCA also assesses two types of pride, i.e. alpha-pride and beta-pride. Because each form of pride is only measured by five items, which results in rather low internal consistencies, and because little attention has been paid to these scales in the literature, they are not further discussed in the present paper.

shame); a positive relationship between proneness to externalization and proneness to unconcern (absence of internal attribution in either reaction); a negative relationship between proneness to unconcern and both proneness to guilt and shame (not appraising versus appraising events as emotionally relevant); and a negative relationship between proneness to guilt and proneness to externalization (taking responsibility for one's behaviour versus externalizing the blame).[2]

TOSCA scales and long-term affects

Long-term affects refer to the frequency with which people experience various feelings and emotions (Diener, Smith and Fujita, 1995). Research concerning long-term affects typically reveals six basic factors underlying interindividual differences in long-term affect, namely sadness, fear, anger, guilt/shame, joy, and love (see e.g. Diener *et al.*, 1995, for an overview, and Fontaine, De Boeck, Luyten and Corveleyn, paper submitted for publication, for a replication). Since these six long-term affects relate all directly or indirectly to indices of intra- and interpersonal functioning (such as depression, anger, anxiety, and empathy) (see Tangney, 1995, 1998; Tangney *et al.*, 1995) that have been related to the TOSCA guilt and shame scales in the literature, they allow us to investigate the external relationships of the TOSCA in a comprehensive way. In what follows, we shall discuss in detail which relationships can be theoretically expected between these long-term affects and proneness to shame and guilt as measured by the TOSCA scales.

Shame proneness

Since negative, internal, global, uncontrollable, and stable attributions, which are characteristic for shame, have also been identified as important causes, or at least concomitants, of depression and anxiety (Barnett and Gotlib, 1988; Gotlib, 1984; Ingram and Hamilton, 1999) and can suppress and undermine feelings of joy and happiness in the long run, we predict a positive relationship between proneness to shame and long-term affects of sadness and fear (see also Tangney, Wagner and Gramzow, 1992b, 1992c) and a negative relationship with long-term affects of joy. Moreover, we expect a positive relationship with long-term affects of anger, because of the defensive externalization that can follow a shame reaction (see also Tangney, Wagner, Fletcher and Gramzow, 1992). Furthermore, a positive relationship between shame proneness and long-term affects of both guilt and shame is predicted, based on the mutual relationship between these affects (see also Tangney *et al.*, 1995). No prediction can made for the relationship with long-term affects of love. One the one hand, shame is related to interpersonal sensitiveness, which is important for supporting interpersonal bonds, but is, on the other hand, also associated with a defensive mechanism of externalizing blame, which can be detrimental for interpersonal bonds.

Guilt proneness

Guilt resembles shame in that it also is a negatively valenced emotion characterized by internal attributions, but differs from it by specific, controllable, and unstable attributions. Therefore, we expect no relationships with long-term affects of fear and sadness (see also Tangney *et al.*, 1995). Moreover, since guilt is focused on taking responsibility for the negative consequences of one's behaviour followed by reparation and attempts to restore interpersonal bonds, we expect a negative relationship with long-term affects of anger

[2]Interestingly, TOSCA guilt correlated negatively with externalization only after partialling out TOSCA shame from TOSCA guilt (Tangney, 1995).

(see also Tangney *et al.*, 1992a; Tangney, 1995), and a positive relationship with long-term affects of love. The relationship between TOSCA-shame, TOSCA-guilt, and long-term affects of guilt and shame is still the subject of a vehement theoretical and empirical discussion (Tangney, 1995; Harder, 1995; Bybee and Quiles, 1998). In a series of studies with the TOSCA, Tangney and her associates (see e.g. Tangney *et al.*, 1995) have consistently found that TOSCA-shame partialled out for TOSCA-guilt is positively related to long-term affects of shame and guilt. However, TOSCA-guilt partialled out for TOSCA-shame was not or only marginally related to long-term affects of shame and of guilt, as measured by the Personal Feelings Questionnaire-2 (PFQ-2, Harder, Cutler and Rockart, 1992). Various *post hoc* explanations have been proposed for these findings, for instance that guilt inherits the negative characteristics of shame when it becomes fused with shame (Tangney *et al.*, 1995). Since the nature of our data does not allow for a new contribution to this discussion, we shall not go deeper into it. In line with the findings in the literature, we expect long-term affects of guilt and shame only to be positively related to guilt-proneness when shame-proneness is not controlled for. No predictions could be made with respect to long-term effects of joy.

Proneness to externalization and unconcern

The other two scales of the TOSCA, namely externalization and unconcern, have received little attention in the literature. Therefore, with the exception of two predictions, their relationships with long-term affects will only be investigated exploratively in this study. First, the tendency to blame others—which has been identified as a major appraisal of anger (Frijda, 1986)—can be expected to have a positive relationship with long-term affects of anger. Second, since an unconcern reaction is incompatible with guilt and shame, a negative relationship between a proneness to unconcern and long-term affects of guilt and shame can be expected.

METHOD

Samples

Subjects were 723 students who followed a psychology course at a large Belgian university between 1995 and 2000, and 891 adults. Participants in the student sample ranged in age from 18 to 29 years old ($M = 21$); 34% were male. In the adult sample, participants ranged in age between 20 and 79 years old ($M = 38.5$); 45% were male. All participants were Dutch-speaking Belgians. Subjects with more than 5% missing values on the TOSCA were deleted from all analyses.[3]

Procedure and measures

Participants received a booklet with the questionnaires in an envelope, together with the instruction to complete the booklet and to return it in the envelope within two weeks. Full confidentiality and anonymity were guaranteed. Students received full course credit for participation. Participants from the adult sample were recruited via the students and received the same booklet and instructions.

Participants completed the following measures.

[3]In total, six students and 29 adults were deleted from all analyses.

TOSCA

The Test of Self-Conscious Affect (TOSCA; Tangney *et al.*, 1989) was translated into Dutch according to the guidelines specified by the International Test Commission (Hambleton, 1994), using the translation–back-translation procedure and a committee approach (Van de Vijver and Leung, 1997). Estimates of internal consistency (Cronbach's alpha) for the adult and student sample respectively were 0.75 and 0.75 for TOSCA-shame (T-shame), 0.66 and 0.62 for TOSCA-guilt (T-guilt), 0.64 and 0.62 for TOSCA-unconcern (T-unconcern), and 0.62 and 0.58 for TOSCA-externalization (T-externalization). These coefficients are rather low, but comparable to what has been reported by Tangney and her associates (Tangney, 1996).

Leuven emotion scale (LES)

The Leuven Emotion Scale (LES) is a measure of the frequency with which one experiences long-term affects (Fontaine *et al.*, paper submitted for publication). The LES contains 76 emotion terms pertaining to 18 subscales covering the whole emotion domain. Subjects were first instructed to read all emotion terms of the LES and then to indicate how often they experienced each emotion on a five-point scale (0—never, 1—seldom, 2—sometimes, 3—often, 4—(almost) constantly).

The emotion terms were selected based on a study of the cognitive structure of emotions (Fontaine, Poortinga, Setiadi and Suprapti, 1996, in press[Q1]). Confirmatory factor analysis on the 18 emotion scales largely revealed the same six-factorial internal structure consisting of the following factors: joy, love, sadness, fear, anger, and guilt/shame (Fontaine *et al.*, 2000) as found also by Diener *et al.* (1995) with an *a priori* selection of emotion terms from the emotion literature. The 18 scales are associated with the six factors as follows: Calmness, Joy, and Enthusiasm represent the Joy factor; Passion, Love, and Empathy represent the Love factor; Sadness, Depression, Humiliation, and Loneliness represent the Sadness factor; Fear and Nervousness represent the Fear factor; Disgust, Hate, Anger, and Irritation represent the Anger factor; and Guilt[4] and Shame[5] represent the Guilt/shame factor. Internal consistencies (Cronbach's alpha) of the 18 scales ranged from 0.63 to 0.88 with an average of 0.77.

STAI, STAS, and BDI

Subjects also had to complete the following measures of depression, anxiety and anger: the Dutch version of the Beck Depression Inventory (BDI; Bouman, Luteijn, Albersnagel and Van der Ploeg, 1985), the trait scale of the State–Trait-Anxiety Inventory (STAI; Van der Ploeg, Defares and Spielberger, 1980), and the trait scale of the State–Trait Anger Scale (STAS; Van der Ploeg, Defares and Spielberger, 1982).

RESULTS

Internal structure of the TOSCA

Since the construction and the use of the TOSCA is grounded in an extensive theoretical framework, we used confirmatory factor analysis (CFA) for testing its internal structure.

[4]The LES guilt scale consists of the emotion terms *schuld* [guilt], *spijt* [regret], *berouw* [repentance], *zondigheid* [sinfulness], and *wroeging* [remorse].

[5]The LES shame scale consists of the emotion terms *schaamte* [shame], *schroom* [diffidence], *verlegenheid* [embarrassment], *onzekerheid* [uncertainty], and *minderwaardigheid* [inferiority].

For the selection of the specific factor models to be tested, an optimal balance was sought between the complex nature of the instrument on the one hand and robustness and likelihood of cross-validation on the other hand. In order to link up with the instrument, the factor models could take its scriptlike nature into account. However, with 55 items nested in 15 situations this would lead to overly complex factor models with a minimum of 19 factors (15 situations and four TOSCA scales). Moreover, since each of the four reaction types is measured by a different item within each situation, there is no unique interpretation for structural differences across situations. They could point to situation specificity, or they could merely be accounted for by the specific item formulation. Therefore, we decided not to take into account the scriptlike nature of the instrument.

Another problem we faced before using CFA is that some of the item distributions were rather (positively or negatively) skewed, which violates the multivariate normality assumptions of CFA. A possible solution for this problem is to work with item parcels instead of the single items (see Marsh, Hau, Balla and Grayson, 1998).[6] Item parcels are computed based on a group of items. Since item parcels are less skewed than individual items and since they also allow for a reduction of the large number of items, working with item parcels should lead to more robust and replicable results.[7] However, an *a priori* construction of item parcels for each TOSCA scale would not allow the identification of possibly flawed items—one of the aims of the present research. Since we had two large samples at our disposal, we followed a six-step procedure that allowed us to screen individual items on the one hand, and that offered the possibility to apply CFA to item parcels on the other hand.

Item analyses on student sample

In a first step, we performed an iterative item analysis in the student sample for the identification of items that did not discriminate empirically between the scale an item belongs to and the other three scales. Because of the large sample size, we considered it a minimal requirement for a differentiating item that it correlated significantly more highly ($p < 0.05$) with the scale for which it was designed (with the item in question being excluded from the total scale) than with the three other scales (see for instance Hinkle, Wiersma and Jurs (1988) for a statistical test for difference between dependent correlations). In three iterations, 26 items that did not differentiate statistically were removed from their respective *a priori* scales. In a fourth and last iteration, three of these 26 items could be reintroduced without affecting the differentiating power of the already identified items. As a result, we identified ten guilt items that did not differentiate with the shame scale, three shame items that did not differentiate with the guilt scale, one shame item that did not differentiate with the externalization scale, three externalization items that did not differentiate with the shame scale, two externalization items that did not differentiate with the unconcern scale, one externalization item that did not differentiate with the guilt scale, one externalization item that did not differentiate with the guilt and the shame scales, and two unconcern items that did not differentiate with the externalization scale. Thus, 20 of the 22 non-differentiating items did not differentiate between emotional reactions for which a positive relationship was expected (unconcern–externalization, externalization–shame, shame–guilt).

[6]Marsh *et al.* (1998) have demonstrated that working with item parcels is a justifiable strategy if one works with large sample sizes, as is the case in this study.

[7]Still another possibility to deal with the skewedness would have been to work with polychoric correlations. However, since this would imply the estimation of additional parameters (the latent thresholds) per item for a large number of items, cross-validation would be less likely.

Inspection of item content

The second step consisted of a close inspection of the item content of the differentiating and non-differentiating items. This inspection revealed that the five remaining guilt items that did differentiate all referred to a tendency to repair. Nine of the 11 discriminating shame items referred explicitly to a global negative self-evaluation and the other two items referred to a tendency to disappear. All eight discriminating unconcern items referred to a minimization of the seriousness of a situation and all eight discriminating externalization items referred to a tendency of putting the blame on others or external causes for which one cannot be held responsible.[8]

Non-discriminating items showed a remarkable heterogeneity. For instance, items not differentiating between the guilt and the shame scale referred to avoiding eye contact, feeling isolated, negative aspects of guilt (such as intra-punitive reactions and rumination), and counter-factual thinking.

Construction of item parcels

In a third step, we constructed 20 item parcels from the 55 items, based on two or three items. The items belonging to the same parcel shared the same correlational pattern with the four reduced TOSCA scales and referred as much as possible to the same emotional reaction. The following 20 item parcels were constructed: GG1-2 (with differentiating guilt items), GS1-4 (with guilt items not differentiating from shame), SS1-4 (with differentiating shame items), SG1 (with shame items not differentiating from guilt), EE1-3 (with differentiating externalization items); ES1 (with externalization items not differentiating from shame), EU1 (with externalization items not differentiating from unconcern), UU1-3 (with differentiating unconcern items), and UE1 (with unconcern items not differentiating from externalization).[9] Three of the original 55 TOSCA items could not be attributed to a parcel and were excluded from further analyses.[10]

CFA on student sample

In a fourth step, we compared two models in the student sample with confirmatory factor analyses (CFAs). Based on Tangney's (1990) theorizing and her scale construction, we constructed a first model with four factors with each item parcel loading only on one factor. An alternative model was constructed taking into account the item analysis results with the 12 item parcels that consist only of differentiating items loading on a single factor, and with the eight remaining item parcels loading on two factors.

To evaluate model fit, we relied on a recent overview of MacCallum and Austin (2000) and on large-scale simulation studies by Hu and Bentler (1998, 1999). We used a cutoff of 0.06 for the root mean squared error of approximation (RMSEA), combined with a cutoff point of 0.07 for the standardized root mean square residual (SRMR). In a simulation study, using a model that closely resembles our second model, Hu and Bentler (1998)

[8]Moreover, by means of PCA it was investigated whether the reduced scales were truly unidimensional. For each reduced scale, the scree test clearly indicated a single component, supporting the assumption of unidimensionality.

[9]The 20 item parcels were constructed based on the following items (numbers refer to the situation and letters to the reaction within each situation): GG1 (1c, 12e), GG2 (5d, 8d, 13d), GS1 (2a, 4c, 10d), GS2 (3a, 11c, 14c), GS3 (6b, 15c), GS4 (7a, 9c), SS1 (10b, 11d, 15a), SS2 (7c, 8a, 9a), SS3 (1a, 4a, 6c), SS4 (2b, 14b), SG1 (3e, 12b, 13b), EE1 (2c, 3d, 14a), EE2 (4b, 5a, 8b), EE3 (9b, 11b), ES1 (1d, 6e, 15b), EU1 (7b, 10a), UU1 (10c, 11a, 13a), UU2 (1b, 4d, 14d), UU3 (2d, 8c), EU1 (5b, 7d).

[10]One item was excluded because it did not discriminate between three of the four reduced scales and two others were excluded because there were no other items sharing the same theoretically expected and observed correlation pattern.

found that the combination of these two criteria resulted in the smallest sum of both type I and type II errors using maximum likelihood estimation procedures, even when some CFA assumptions were violated.

Since we wanted to compare two CFA models, we also used the consistent version of Akaike's information criterion (CAIC), which allows to compare two CFA models taking into account fit, parsimony and sample size. The lower the CAIC is, the better the model (Byrne, 1998).

We performed two CFA analyses with LISREL (version 8.30) (Jöreskog and Sörbom, 1996) on the covariance matrix between the items and using a maximum likelihood estimation procedure.[11] Results showed that the first model did not represent a good fit to the data, but that the alternative model did (see Table 1). In the alternative model, all parameters were significant, except for the correlation between the guilt and the externalization factor. Fixing this latent correlation to zero did not affect the fit of the model (see Table 1).

CFA on the adult sample

In a fifth step, we tested both CFA models in the adult sample. CFA on the student sample could not be considered as a truly confirmatory analysis, since both the item parcels and the alternative model were constructed on the basis of a preliminary screening of the same data. Again, only the alternative model with cross-loadings for eight item parcels had a good fit to the data (see Table 1). As in the student sample, all parameters of the model were statistically significant except for the latent correlation between the guilt and the externalization factor, which we fixed to zero (see Table 1).

Multiple group CFA

In a sixth and final step, we also investigated whether the parameters of the alternative model were the same in the student and the adult sample. In a multiple group LISREL analysis, we assumed all parameters of the alternative model (factor variances and covariances, item loadings and residual item variances) to be equal across the two samples. Using the same criteria to evaluate the fit of both models, the model with all parameters

Table 1. Fit measures of confirmatory factor analyses

Sample and model	df	Chi^2	RMSEA	90% CFI RMSEA	SRMR	CAIC
Students						
First model	164	622.46	0.062	0.057; 0.068	0.068	970.91
Model with cross-loadings	156	410.30	0.048	0.042; 0.053	0.044	819.35
Restricted model with cross-loadings[a]	157	410.39	0.047	0.042; 0.053	0.044	811.87
Non-students						
First model	164	745.76	0.064	0.060; 0.069	0.066	1102.69
Model with cross-loadings	156	502.34	0.051	0.046; 0.056	0.045	921.34
Restricted model with cross-loadings[a]	157	502.77	0.051	0.046; 0.056	0.045	914.01
Multiple group analysis						
Restricted model with cross-loadings Without equality restrictions[a]	314	913.16	0.049	0.045; 0.053	0.045	1799.80
Restricted model with cross-loadings With all parameters equal[a]	367	1129.56	0.051	0.048; 0.055	0.059	1572.88

[a]In the restricted model, the covariance between guilt and externalization is fixed to zero.

[11]A table with the covariances between the item parcels is available from the first author.

Table 2. Completely standardized parameters (loadings, factor correlations and communalities) for restricted CFA model with cross-loadings and with all parameters equal for students and for non-students

	Factor loadings				
Item parcels	Guilt	Shame	Externalization	Unconcern	Communalities
GG1	0.48	—	—	—	0.23
GG2	0.62	—	—	—	0.38
GS1	0.40	0.26	—	—	0.28
GS2	0.22	0.24	—	—	0.13
GS3	0.34	0.40	—	—	0.35
GS4	0.34	0.16	—	—	0.17
SG1	0.32	0.43	—	—	0.36
SS1	—	0.56	—	—	0.32
SS2	—	0.64	—	—	0.41
SS3	—	0.66	—	—	0.43
SS4	—	0.69	—	—	0.47
ES1	—	0.19	0.37	—	0.21
EE1	—	—	0.57	—	0.32
EE2	—	—	0.60	—	0.36
EE3	—	—	0.56	—	0.31
ED1	—	—	0.32	0.16	0.18
DE1	—	—	0.39	0.15	0.22
DD1	—	—	—	0.62	0.38
DD2	—	—	—	0.62	0.38
DD3	—	—	—	0.55	0.30

	Factor correlations		
Factors	Guilt	Shame	Externalization
Shame	0.27		
Externalization	—	0.28	
Unconcern	− 0.13	− 0.47	0.43

fixed for the two samples had a good fit to the data (see Table 1). Therefore, we present only the parameters of this last model (see Table 2). The multiple group CFA, thus, confirms the earlier results and the good fit of the model with cross-loadings.

Seventeen of the 20 item parcels had the highest loading on the theoretically predicted factor, while two guilt item parcels had a higher loading on the shame factor and one unconcern item parcel had a higher loading on the externalization factor. Furthermore, the guilt and the shame factors, the shame and the externalization factors, and the externalization and the unconcern factors were positively related. The unconcern factor was negatively related to both the shame and the guilt factor. The guilt factor and the externalization factor were unrelated.

Original and differential TOSCA scales and their relationships with long-term affects

Based on the item analysis, the CFA and the content analysis, we constructed 'differential TOSCA scales', with only items that discriminated empirically between the four scales

and that referred to the same item content. The differential guilt scale (D-guilt) contained five items, which all refer to reparation, the differential shame scale (D-shame) contained nine items, which all refer to negative self-evaluation, the differential externalization scale (D-externalization) contained seven items, which all refer to externalizing blame, and finally the differential unconcern scale (D-unconcern) contained eight items, which all refer to minimizing seriousness.

Estimates of internal consistency (Cronbach's alpha) of these differential TOSCA-scales in the student and adult sample respectively were 0.46 and 0.45 for D-guilt, 0.70 and 0.70 for D-shame, 0.56 and 0.59 for D-externalization, and 0.64 and 0.64 for D-unconcern. In both the student and the adult sample, the correlation between the original TOSCA scales (T-scales) and differential TOSCA scales (D-scales) was 0.94 for shame, 0.95 for unconcern, and 0.88 for externalization. For guilt, the correlation was 0.68 in the student sample and 0.71 in the adult sample.

To investigate whether the differential scales could account for the relationships reported with the original scales, we compared bivariate Pearson correlations between the original and differential scales with the LES, BDI, TAI and TAS in a pooled student–adult sample (see Table 3).[12] Moreover, as suggested by Tangney and her collaborators (see e.g. Tangney *et al.*, 1995), part correlations were computed for T-guilt and T-shame. Since even very small correlations attained statistical significance due to the large sample size, we decided to take only correlations above 0.10 into account.

TOSCA shame

As expected, T-shame correlated positively with the BDI, TAI, TAS, the LES guilt/shame, fear, sadness, and most of the anger scales, and negatively with the LES joy scales. It correlated also positively with LES empathy and was virtually unrelated to LES love and LES passion (see Table 3). Moreover, both the pattern and the size of correlations obtained with T-shame is virtually identical to those of T-shame after controlling for T-guilt and to those of D-shame (see Table 3).

TOSCA guilt

T-guilt was positively related to LES empathy, LES love, TAI, and the LES guilt/shame, fear, and sadness scales, and was negatively related to LES hate (see Table 3). As expected, all positive correlations between T-guilt and negative long-term affects disappeared when T-guilt was controlled for T-shame. After controlling for T-shame, T-guilt correlated positively with LES empathy, LES love; and two of the LES joy scales; and negatively with LES hate. Both the pattern and the size of correlations of D-guilt closely resembled the pattern and size of correlations observed with T-guilt controlled for T-shame, with the exception of small positive correlations of D-guilt with LES fear and LES guilt (see Table 3).

TOSCA externalization

As expected, T-externalization was positively related to the TAS and the LES anger scales. Moreover, T-externalization correlated positively with the BDI, TAI, and most of the LES sadness and fear scales, but was largely unrelated to the LES guilt/shame, love, and joy scales (see Table 3). Furthermore, the pattern of correlations obtained with

[12]Since the correlations for the student and the adult samples separately were highly comparable, only the correlations on the pooled sample are represented. The pooled correlation was computed in such a way that the student and adult sample received the same weight, independent of the number of observations within the sample. A table with the correlations for the two samples separately can be requested from the first author.

Table 3. Bivariate and part correlations between original (T) and differential (D) TOSCA scales and the LES long-term affects across pooled student–teacher samples

LES	Shame			Guilt			Unconcern		Externalization	
scale	T	Part T	D	T	Part T	D	T	D	T	D
Anger										
Anger	0.15****	0.17****	0.13****	−0.00	−0.07*	−0.07*	−0.05	−0.06*	0.10**	0.05
Hate	0.10**	0.15****	0.10**	−0.10**	−0.15****	−0.19****	0.01	−0.00	0.15****	0.15****
Irritation	0.20****	0.21****	0.20****	0.02	−0.07*	−0.03	−0.10***	−0.12***	0.10**	0.05
Disgust	0.13****	0.15****	0.13****	−0.01	−0.07*	−0.04	−0.04	−0.06	0.12****	0.11***
TAS	0.26****	0.24****	0.25****	0.07*	0.00	−0.03	−0.06*	−0.09**	0.18****	0.14****
Sadness										
Depression	0.36****	0.35****	0.35****	0.11***	−0.04	0.01	−0.15****	−0.18****	0.11***	0.07*
Sadness	0.31****	0.28****	0.29****	0.12****	0.00	0.06	−0.16****	−0.18****	0.03	−0.00
Loneliness	0.31****	0.32****	0.30****	0.04	−0.09**	−0.01	−0.12***	−0.13****	0.10**	0.07*
Humiliation	0.36****	0.33****	0.34****	0.13****	−0.01	0.01	−0.13****	−0.17****	0.14****	0.09**
BDI	0.32****	0.33****	0.32****	0.06*	−0.08**	−0.02	−0.08**	−0.11****	0.17****	0.14****
Fear										
Fear	0.33****	0.28****	0.29****	0.18****	0.05	0.11***	−0.16****	−0.20****	0.10**	0.06
Nervousness	0.30****	0.27****	0.31****	0.14****	0.02	0.08*	−0.13****	−0.17****	0.10**	0.08**
TAI	0.39****	0.38****	0.37****	0.09**	−0.08**	−0.03	−0.18****	−0.21****	0.12****	0.09**
Guilt/Shame										
Shame	0.45****	0.41****	0.42****	0.19****	0.00	0.08*	−0.17****	−0.20****	0.04	−0.01
Guilt	0.34****	0.28****	0.33****	0.22****	0.09**	0.10**	−0.16****	−0.20****	0.04	0.00
Love										
Empathy	0.21****	0.08**	0.18****	0.35****	0.29****	0.31****	−0.11***	−0.14****	−0.01	−0.02
Love	0.05	−0.03	0.04	0.19****	0.19****	0.20****	−0.01	−0.02	−0.06	−0.07*
Passion	−0.04	−0.03	−0.02	−0.02	−0.01	0.00	0.05	0.03	−0.00	0.02
Joy										
Joy	−0.15****	−0.18****	−0.15****	0.04	0.11***	0.09**	0.14****	0.14****	−0.05	−0.03
Calmness	−0.20****	−0.23****	−0.19****	0.02	0.12***	0.07*	0.16****	0.17****	−0.06*	−0.05
Enthusiasm	−0.14****	−0.15****	−0.11***	−0.00	0.06*	0.03	0.11***	0.11***	−0.06	−0.04

Note. ****$p < 0.0001$, ***$p < 0.001$, **$p < 0.01$, *$p < 0.05$. $N_{BDI/Non\text{-}students} = 811$, $N_{BDI/Students} = 421$, $N_{TAI/Non\text{-}students} = 849$, $N_{TAI/Students} = 427$, $N_{TAS/Non\text{-}students} = 849$, $N_{TAS/Students} = 427$, $N_{LES/Non\text{-}students} = 572$, $N_{LES/Students} = 429$.

D-externalization was very similar to that observed with T-externalization, although the correlations tended to be somewhat lower (see Table 3).

TOSCA unconcern

T-unconcern was, as expected, significantly negatively related to LES guilt and LES shame (see Table 3). Furthermore, T-unconcern was also negatively related to the TAI, BDI, LES empathy, LES hate, and LES fear and sadness scales. Moreover, it was positively related to the LES joy scales. Both the pattern and the size of the correlations between D-unconcern and long-term affects was very similar to those obtained with T-unconcern (see Table3).

DISCUSSION

Since confirmatory factor analyses (CFAs) across two large samples of students and adults provide new evidence for the hypothesis that subjects' responses to the TOSCA can be accounted for by four constructs and since the TOSCA scales largely demonstrate the theoretically expected pattern of relationships with long-term affects, the present results offer strong support for the validity of the TOSCA. However, the fact that two-fifths of the TOSCA items did not differentiate empirically between two or more scales, and the fact that these non-differentiating items could be omitted without substantially affecting the correlations between the TOSCA scales and long-term affects, calls for a more restrictive interpretation as to what is adequately measured by the TOSCA-scales.

TOSCA-shame

T-shame primarily measures a proneness to focus negatively on the global self. Nine of the 15 T-shame items that exclusively referred to this aspect differentiated empirically between the four scales and reproduced the relationships with long-term affects obtained with the T-shame scale. Both the original T-shame scale and the D-shame scale were positively related to virtually all negative long-term affects and were negatively related to joy, supporting the view that a global negative focus on the self is maladaptive for interpersonal and intrapersonal functioning. However, somewhat unexpectedly, both shame scales were also positively related to empathy. One possible explanation of this finding is that the empathy measure used in this study is not able to differentiate between two forms of empathy, i.e. self-oriented distress, where the primary focus lies on the own needs and the negative experiences of the empathizer, and other-oriented empathy, where the primary focus lies on the needs and experiences of the other (Davis, 1983). Tangney (1991, 1995) has found, after controlling for T-shame and T-guilt respectively, that T-guilt is positively related to other-oriented empathy, but unrelated to self-oriented distress, while T-shame is positively related to self-oriented distress but unrelated to other-oriented empathy.

TOSCA-guilt

Only five of the 15 T-guilt items differentiated empirically between the four scales. These five items all referred to reparative behaviour. Other features of guilt that have been operationalized in the TOSCA (such as rumination) did not differentiate between shame and guilt factors. Despite the fact that the D-guilt scale was far less reliable than the original T-guilt scale, it largely replicated the theoretically expected relationships with

long-term affects without having to control for T-shame. This clearly indicates that the specificity of the T-guilt scale lies in reparative behaviour. Moreover, the relationships between both the original and differential TOSCA guilt scales and long-term affects support the expectation that a proneness to reparative behaviour is an adaptive (moral) reaction that especially fosters interpersonal relationships. A tendency to repair the negative consequences of one's behaviour was positively related to long-term affects of empathy and love, and negatively related to long-term affects of hate, while virtually unrelated to all other long-term affects.

TOSCA-externalization

The seven of the ten externalization items that differentiated empirically referred to externalizing the blame. The relationships with long-term affects were rather small. However, externalization was, as expected, positively related to anger. Moreover, it was also positively related to measures of sadness and fear. Taken together, these findings support the interpretation that externalizing blame in guilt and shame situations is a defensive reaction.

TOSCA-unconcern

One of the most surprising findings of this study was the relationship between T-unconcern and long-term affects. Besides the expected negative relationships with long-term affects of guilt and shame, T-unconcern was consistently negatively related to long-term affects of sadness and fear, and positively related to long-term affects of joy, but unrelated to most scales measuring long-term affects of anger and love (except for empathy, which was negatively related to unconcern). Thus, these findings suggest that a proneness to unconcern, as measured by the TOSCA, can be adaptive, especially for intrapersonal functioning. It seems that people who minimize the seriousness of common guilt and shame situations just feel happy more often and unhappy less often.

One important limitation of this study is that it included only nonclinical samples. Since some of the hypotheses derived from Tangney's conceptual framework (e.g. Tangney *et al.*, 1995), are explicitly related to psychopathology (e.g. concerning the relationship between guilt, shame and depression), further research and validation of findings reported in this study in clinical samples is needed.

Another important limitation is that the non-differentiating items could not be further investigated because it was not possible to construct reliable scales for the different theoretical features of shame and guilt that were included in the TOSCA. None of these features was represented by a large enough number of items. Thus, it remains a question for future research whether the present findings can be generalized to other features of guilt than reparation and other features of shame than a negative self-focus. Perhaps a thorough investigation of the precise role of these other theoretical features of shame and guilt might shed a new light on the vigorous debate between various conceptualizations of guilt and shame in the literature (see e.g. Bybee and Quiles, 1998; Tangney, 1998; Tangney *et al.*, 1995; Harder, 1995).

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